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HOST PLANTS OF THE SIX-SPOTTED LEAFHOPPER AND THE ASTER
YELLOW S VIRUS AND OTHER VECTORS OF THE VIRUS

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A compilation from the literature of the host plants of the aster yellows virus and its most important vector the six-spotted leafhopper (Macrostelus fascifrons (Stal)) was undertaken for background information for some new investigations of this disease on truck-crop and ornamental plants. It is presented here in the hope that it may be of use to other workers on the aster yellows problem.

This host-plant list includes 319 plant species in 54 families on which the six-spotted leafhopper, virus infection, or both have been recorded. Of these species 127 are in the family Compositae. Of the total number 22 are only reported to be host plants of the leafhopper, as it was not indicated whether or not they are subject to infestation by the virus, and 175 are only indicated as hosts of the virus, there being no record of the occurrence of the leafhopper. Virus infection has been recorded in all the 54 families except Convolvulaceae, Gramineae, and Oxalidaceae; whereas the leafhopper has been recorded on only 40 of the families.

The literature also shows that, although the six-spotted leafhopper appears to be the only vector of the eastern strain of the aster yellows virus, there are a number of other vectors of the western (California or celery yellows) strain of the virus. A list of the vectors of the western strain is also presented.

Host Plants of the Six-Spotted Leafhopper and/or the Aster Yellows

Family and Species	Reference
Acanthaceae	
<u>Thunbergia alata</u> Bojer* - - - - -	6, 10
Aizoaceae	
<u>Tetragonia expansa</u> Murr.* - - - - -	6, 10
Amaranthaceae	
<u>Amaranthus aurora</u> - - - - -	6, 8
<u>A. caudatus</u> L. - - - - -	6, 8
<u>A. retroflexus</u> L. (rough pigweed) - - - - -	3
Apocynaceae	
<u>Vinca rosea</u> L.* - - - - -	6, 10
Asclepiadaceae	
<u>Asclepias nivea</u> L. - - - - -	6, 8
Begoniaceae	
<u>Begonia semperflorens</u> Link & Otto - - - - -	6, 8
Boraginaceae	
<u>Anchusa barrelieri</u> Vitm.* - - - - -	6, 10
<u>A. capensis</u> Thunb.* - - - - -	6, 10
<u>Myosotis scorpioides</u> L. (forget-me-not) - - - - -	6, 8, 21
Cannaceae	
<u>Canna</u> sp. (canna) - - - - -	25
Campanulaceae	
<u>Lobelia erinus</u> L. var. <u>compacta</u> Hort.* - - - - -	6, 10
Caryophyllaceae	
<u>Dianthus alpinus</u> L.* - - - - -	6, 10
<u>D. barbatus</u> L. (sweet-william)* - - - - -	21
<u>D. caryophyllus</u> L. (carnation) - - - - -	26
<u>Gypsophila paniculata</u> L. (babysbreath)* - - - - -	6, 21
<u>Herniaria glabra</u> L.* - - - - -	6, 10
<u>Lychnis coronaria</u> (L.) Desr.* - - - - -	6, 10
<u>L. viscaria</u> L.* - - - - -	6, 10
<u>Polycarpon tetraphyllum</u> L.* - - - - -	6, 10
<u>Silene pendula</u> L.* - - - - -	6
<u>Spergula arvensis</u> L. (corn spurry) - - - - -	3
<u>Stellaria media</u> (L.) Cyr. (common chickweed) - - - - -	3
<u>Tunica saxifraga</u> (L.) Scop.* - - - - -	6, 10
<u>Vaccaria segetalis</u> (Neck.) Gcke = <u>Silene vaccaria</u> L.* -	6, 10

*Host of virus but no record of leafhopper occurrence.

Family and Species	Reference
Chenopodiaceae	
<u>Beta vulgaris</u> L. (beet) ** - - - - -	2
<u>Monolepis chenopodioides</u> (Nutt.) Moq.* - - - - -	6, 10
<u>Spinacia oleracea</u> L. (spinach)* - - - - -	6, 17
Cistaceae	
<u>Helianthemum chamaecistus</u> Mill.* - - - - -	6, 10
Compositae	
<u>Acroclinium roseum</u> Hook. (acroclinium)* - - - - -	6, 10
<u>Ambrosia artemisiifolia</u> L. (hogweed) - - - - -	6, 8
<u>A. trifida</u> L. (horseweed)- - - - -	6, 8
<u>Ammobium alatum</u> R. Br. (winged everlasting)* - - - - -	6, 8
<u>Anthemis cotula</u> L. (mayweed) - - - - -	3
<u>A. tinctoria</u> L. (golden marguerite)* - - - - -	6, 10
<u>Arctotis grandis</u> Thunb. (African daisy)* - - - - -	6, 10
<u>Aster chilensis</u> Nees. (common aster) - - - - -	3
<u>Bellis perennis</u> L. (English daisy) - - - - -	6, 8
<u>Bidens frondosa</u> L. (beggarticks)* - - - - -	3
<u>B. pilosa</u> L. (hairy bur marigold)* - - - - -	3
<u>Brachycome iberidifolia</u> Benth. (Swan River daisy)* - - -	6, 21
<u>Cacalia hastata</u> L.* - - - - -	6, 10
<u>Calendula officinalis</u> L. (pot-marigold) - - - - -	6, 8, 21
<u>Calliopsis</u> sp. = <u>Coreopsis</u> sp. - - - - -	8
<u>Callistephus chinensis</u> (L.) Nees. (China-aster) - - - - 2, 6, 8, 21	
<u>Carthamus tinctorius</u> L.* - - - - -	6, 10
<u>Centaurea americana</u> Nutt. (basket-flower)* - - - - -	21
<u>C. cyanus</u> L. (cornflower or bachelor button) - - - - -	3, 21
<u>C. imperialis</u> Hort. (giant sweet sultan) - - - - -	6, 8
<u>C. margaritae</u> Hort. (centaurea) - - - - -	6, 8
<u>C. melitensis</u> L. (napa thistle) - - - - -	3
<u>Charlieis heterophylla</u> Cass.* - - - - -	6, 10
<u>Chrysanthemum carinatum</u> L. (tricolor chrysanthemum)* - -	21
<u>C. cinerariifolium</u> Vis.* - - - - -	6, 10
<u>C. coronarium</u> L. - - - - -	6, 8
<u>C. frutescens</u> L. (Paris daisy or marguerite)* - - - - -	6, 21
<u>C. hortorum</u> Bailey - - - - -	24
<u>C. leucanthemum</u> L. (oxeye-daisy) - - - - -	6, 8
<u>C. maximum</u> Ramond (shasta daisy) - - - - -	6, 8
<u>C. segetum carinatum</u> (corn-marigold chrysanthemum or single yellow daisy) - - - - 5, 20, 21	
<u>C. sp.</u> (feverfew) - - - - -	8
<u>C. sp.</u> (little gem) - - - - -	8
<u>Cichorium endivia</u> L. (endive)* - - - - -	12, 19
<u>C. intybus</u> L. (chicory)* - - - - -	19
<u>Cineraria hybrida</u> Hort.* - - - - -	6, 10

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Family and Species	Reference
Compositae (con.)	
<u>Cirsium oleraceum</u> (L.) Scop.* - - - - -	6, 10
<u>Cladanthus arabicus</u> (L.) Cass.* - - - - -	6, 10
<u>Coreopsis drummondii</u> Torr. & Gray (golden wave coreopsis)* - - -	21
<u>C. grandiflora</u> Nutt. (bigflower coreopsis)* - - - - -	21
<u>C. lanceolata</u> L.* - - - - -	6, 10
<u>C. stillmanii</u> (Gray) Blake* - - - - -	6, 10
<u>Cosmidium</u> sp. = <u>Thelesperma</u> sp. - - - - -	8
<u>Cosmos bipinnatus</u> Cav. (common cosmos)* - - - - -	6, 10, 21
<u>C. sp.</u> (cosmos) - - - - -	2
<u>Cotula australis</u> Hook. f. - - - - -	3
<u>Cousinia hystrix</u> C. A. Mey.* - - - - -	6, 10
<u>Dahlia pinnata</u> Cav.* - - - - -	1
<u>Dimorphotheca aurantiacam</u> DC. (African daisy) - - - - -	6, 8
<u>Echinops dahuricus</u> Fisch.* - - - - -	6, 10
<u>Emilia sagittata</u> (Vahl) DC. (daisy fleabane) - - - - -	6, 8, 10
<u>Erigeron annuus</u> (L.) Pers. (butterweed) - - - - -	6, 8
<u>E. canadensis</u> L. (horseweed)* - - - - -	3, 6
<u>E. glabellus</u> Nutt.* - - - - -	6, 10
<u>E. linifolius</u> Willd. (flax-leaved fleabane) - - - - -	3, 6, 10
<u>E. speciosus</u> (Lindl.) DC.* - - - - -	3, 6, 10
<u>Ethulia conyzoides</u> L.* - - - - -	6, 10
<u>Eupatorium perfoliatum</u> L. (thoroughwort)* - - - - -	6, 10
<u>E. rugosum</u> Houtt. (white snakeroot)* - - - - -	6, 10
<u>Felicia aethiopica</u> (Burm. f.) O. Hoffm.* - - - - -	6, 10
<u>F. amelloides</u> (L.) Voss. (blue marguerite)* - - - - -	6, 10
<u>Filago germanica</u> L.* - - - - -	6, 10
<u>Flaveria repanda</u> Lag.* - - - - -	6, 10
<u>Gaillardia aristata</u> Pursh (gaillardia) - - - - -	6, 8
<u>G. pulchella</u> Foug. var. <u>picta</u> Gray (gaillardia or blanket-flower)* -	21
<u>Galinsoga parviflora</u> Cav. (galinsoga)* - - - - -	3, 6, 10
<u>Gnaphalium californicum</u> DC. (California everlasting)- -	3
<u>G. ramosissimum</u> Nutt. (pink everlasting)* - - - - -	3
<u>Grindelia squarrosa</u> (Pursh) Dun.* - - - - -	6, 10
<u>Hedypnois cretica</u> (L.) Willd.* - - - - -	6, 10
<u>Helenium autumnale</u> L.* - - - - -	3, 6, 10
<u>H. bigelovii</u> Gray* - - - - -	6, 10
<u>H. hoopesii</u> Gray* - - - - -	6, 10
<u>H. nudiflorum</u> Nutt.* - - - - -	3, 6, 10
<u>H. puberulum</u> DC. (rosilla)* - - - - -	3
<u>Helianthus annuus</u> L. (common garden sunflower)* - - - -	21
<u>Helichrysum arenarium</u> (L.) DC. - - - - -	6, 8
<u>H. bracteatum</u> Andr. (strawflower) - - - - -	6, 20, 21
<u>Heliopsis laevis</u> (L.) Pers.* - - - - -	6, 10

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Compositae (con.)	
<u>Helipterum manglesii</u> F. Muell. (Swan River everlasting)* - - - -	6, 10
<u>Hemizonia corymbosa</u> (DC). T. & G. (coast tarweed)* - -	3
<u>Hieracium alpinum</u> L.* - - - - - - - - - - - - - - -	6, 10
<u>Koelpinia linearis</u> Pall.* - - - - - - - - - - - - - -	6, 10
<u>Lactuca saligna</u> L. (wild lettuce) - - - - - - - - -	27
<u>L. sativa</u> L. var. <u>longifolia</u> Lam. (romaine lettuce or lettuce) - - - -	2, 6, 8, 19
<u>L. serriola</u> L. (wild lettuce) - - - - - - - - - - -	27
<u>L. serriola</u> L. var. <u>integrata</u> Gren. & Godr. (prickly lettuce) - - - -	3
<u>Lagascaea mollis</u> Cav.* - - - - - - - - - - - - - -	6, 10
<u>Leontodon autumnalis</u> L. (fall dandelion)* - - - - -	3, 6, 10
<u>Leontopodium alpinum</u> Cass. (edelweiss)* - - - - -	6, 10
<u>Lindheimeria texana</u> Gray* - - - - - - - - - - - - -	6, 10
<u>Lonas inodora</u> (L.) Gaertn. (African daisy)* - - - - -	6, 10
<u>Madia sativa</u> Molina (Chilean tarweed) - - - - - - -	3
<u>Matricaria alba</u> = <u>Chrysanthemum parthenium</u> (L.) Bernh. (feverfew) - - - - - - - - - - - - - - -	6, 8
<u>Matricaria matricarioides</u> (Less.) Porter (pineappleweed) - - - -	3
<u>Mulgedium alpinum</u> (L.) Less.* - - - - - - - - - - -	6, 10
<u>Parthenium argentatum</u> Gray (quayule)** - - - - - - -	11
<u>P. integrifolium</u> L.* - - - - - - - - - - - - - - -	6, 10
<u>Petasites albus</u> (L.) Gaertn.* - - - - - - - - - - -	6, 10
<u>Picris echioides</u> L. (bristly oxtongue)* - - - - - - -	3
<u>Pyrethrum</u> sp. = <u>Chrysanthemum</u> sp. - - - - - - - - -	6, 8
<u>Rudbeckia hirta</u> L. (blackeyed susan)* - - - - - - - -	3, 6, 10, 21
<u>Sanvitalia procumbens</u> Lam.* - - - - - - - - - - - -	6, 10
<u>Schkuhria abrotanoides</u> Roth.* - - - - - - - - - - -	6, 10
<u>Scolymus hispanicus</u> L. (Spanish-oyster-plant)* - - - -	6, 10
<u>Scorzonera hispanica</u> L. (black salsify)* - - - - - - -	19
<u>Senecio vulgaris</u> L. (common groundsel)* - - - - - - -	3
<u>Sonchus arvensis</u> L. (perennial sowthistle) - - - - - -	3, 6, 8
<u>S. asper</u> (L.) Hill (prickly sowthistle)* - - - - - - -	3
<u>S. oleraceus</u> L. (common sowthistle)- - - - - - - - -	3, 6, 8
<u>Spilanthus acmella</u> (L.) Murr.* - - - - - - - - - - -	6, 10
<u>Tagetes erecta</u> L. (African marigold) - - - - - - - - -	6, 8, 20, 21
<u>T. patula</u> L. (French marigold) - - - - - - - - - - -	6, 21, 26
<u>Taraxacum officinale</u> Weber (dandelion) - - - - - - - -	6, 8
<u>Thelesperma burridgeanum</u> (Regel) Blake* - - - - - - -	6, 10
<u>Tolpis barbata</u> (L.) Gaertn. (golden-yellow-hawkweed)*-	6, 10
<u>Tragopogon floccosus</u> W. & K.* - - - - - - - - - - -	6, 10
<u>T. porrifolius</u> L. (salsify)- - - - - - - - - - - - -	6, 8

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Compositae (con.)	
<u>Tridax trilobata</u> (Cav.) Hemsl.* - - - - -	6, 10
<u>Ursinia anthemoides</u> (L.) Gaertn.* - - - - -	6, 10
<u>Xanthium canadense</u> Mill. (cocklebur)*** - - - - -	3
<u>X. spinosum</u> L. (spiny clotbur)** - - - - -	3
<u>Zacyntha verrucosa</u> Gaertn.* - - - - -	6, 10
<u>Zinnia elegans</u> Jacq. (zinnia) - - - - -	6, 20, 21
<u>Z. haageana</u> Regel (zinnia)* - - - - -	6
<u>Z. multiflora</u> L. (zinnia)* - - - - -	6, 10
<u>Z. sp.</u> (zinnia) - - - - -	2
Convolvulaceae	
<u>Convolvulus arvensis</u> L. (wild morning-glory)** - - - -	3
Cruciferae	
<u>Alyssum compactum</u> De Not. - - - - -	6, 8
<u>Brassica campestris</u> L. (common yellow mustard) - - - -	3
<u>B. hirta</u> Moench (white London mustard) - - - - -	6, 17
<u>B. oleracea</u> var. <u>botrytis</u> L. (cauliflower)* - - - - -	19
<u>B. oleracea</u> L. var. <u>capitata</u> L. (cabbage)* - - - - -	19
<u>B. oleracea</u> var. <u>italica</u> Plenck. (sprouting broccoli)* -	19
<u>Capsella bursa-pastoris</u> (L.) Medic. (shepherds-purse)* -	3
<u>Cheiranthus allionii</u> Hort. (Siberian wallflower)* - - -	6, 10
<u>C. cheiri</u> L. (wallflower)* - - - - -	21
<u>Malcomia maritima</u> (L.) R. Br. (Virginian stock)* - - -	6, 10
<u>Radicula sylvestris</u> (L.) Druce* - - - - -	6, 10
<u>R. nasturtium-aquaticum</u> (L.) Britt. & Rendle =	
<u>nasturtium officinale</u> R. Br. (watercress)** - - - -	4
<u>Raphanus sativus</u> L. (radish or wild radish)* - - - - -	3, 19
<u>Rorippa curvisiliqua</u> (Hook.) Greene (western yellow cress)* - - - - -	3
Cucurbitaceae	
<u>Cucumis sativus</u> L. (cucumber) - - - - -	2
Datisceae	
<u>Datisca cannabina</u> L.* - - - - -	6, 10
Dipsaceae	
<u>Dipsacus fullonum</u> L. (fullers teasel) - - - - -	3
<u>Scabiosa atropurpurea</u> L. (morning bride or sweet scabious) - - - - -	6, 8, 21
Geraniaceae	
<u>Erodium botrys</u> Bertol. (broadleaf filaree)*** - - - - -	3
<u>E. cicutarium</u> (L.) L'her. (redstem filaree)* - - - - -	3

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***Typical symptoms not demonstrated by recovery of virus.

Family and Species	Reference
Geraniaceae (con.)	
<u>Erodium moschatum</u> (L.) L'her. (whitestem filaree) - - - -	3
<u>Geranium dissectum</u> L. (cut-leaved geranium) - - - - - -	3
Gesneriaceae	
<u>Didymocarpus horsfieldii</u> Schinz.* - - - - - - - - - -	6, 10
<u>Gloxinia</u> sp.- - - - - - - - - - - - - - - - - - - -	6, 8
Gramineae	
<u>Bromus</u> sp. (bromegrass)** - - - - - - - - - - - - - -	7
<u>Polypogon monspeliensis</u> (L.) Desf. (rabbitfoot grass)** -	4
<u>Zea mays</u> L. var. <u>rugosa</u> Bonaf. (sweet corn)** - - - - -	2
Hydrangeaceae	
<u>Hydrangea macrophylla</u> (Thunb.) DC. - - - - - - - - - -	1
Hydrophyllaceae	
<u>Nemophila</u> sp. -	6, 8
<u>Phacelia campanularia</u> Gray* - - - - - - - - - - - - -	6, 10
<u>P. congesta</u> Hook.* - - - - - - - - - - - - - - - - - -	6, 10
<u>P. minor</u> (Harv.) Thell. (California bluebell)* - - - - -	6, 10
<u>P. viscida</u> Torr.* - - - - - - - - - - - - - - - - - -	6, 10
Iridaceae	
<u>Gladiolus</u> sp. (gladiolus) - - - - - - - - - - - - - - -	1, 2, 13, 24
Juncaceae	
<u>Juncus bufonius</u> L. (toad rush)** - - - - - - - - - - -	4
Labiatae	
<u>Dracocephalum ruyschiana</u> L. (dragonhead)* - - - - - - - -	6, 10
<u>Lamium amplexicaule</u> L. (deadnettle) - - - - - - - - - -	3
<u>Lavandula spica</u> L. (lavender)* - - - - - - - - - - - -	6
<u>Physostegia virginica</u> (L.) Benth.* - - - - - - - - - - -	6, 10
<u>Salvia azurea</u> Lam. var. <u>pitcheri</u> (Torr.) Sheldon (azure sage)* - - - - - - - - - - - - - - - - - -	21
<u>Satureia hortensis</u> L. (summer savory) - - - - - - - - - -	6, 8
Leguminaceae	
<u>Lotus corniculatus</u> L. (birdsfoot trefoil)** - - - - - - - -	14
<u>L. salsuginosus</u> Greene - - - - - - - - - - - - - - - - - -	3
<u>Medicago hispida</u> Gaertn. (burclover)* - - - - - - - - - -	3
<u>M. sativa</u> L. (alfalfa)** - - - - - - - - - - - - - - - - -	7
<u>Melilotus alba</u> Desr. (white sweetclover) - - - - - - - - -	3
<u>Trifolium hybridum</u> L. (alsike clover) - - - - - - - - - -	5
<u>T. pratense</u> L. (red clover)** - - - - - - - - - - - - - -	5, 7
<u>T. repens</u> L. (ladino clover) - - - - - - - - - - - - - - -	5, 7

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Family and Species	Reference
Liliaceae	
<u>Allium ascalonicum</u> L. (shallot) - - - - -	24
<u>A. cepa</u> L. (onion)- - - - -	2, 19
Limnanthaceae	
<u>Limnanthes douglasi</u> R. Br. (meadowfoam)* - - - - -	6, 10
Linaceae	
<u>Linum grandiflorum</u> Desf. var. <u>rubrum</u> Vilm. (linum) - - -	2
<u>L. usitatissimum</u> L. (flax) - - - - -	22
Loasaceae	
<u>Blumenbachia hieronymi</u> Urb.* - - - - -	6, 10
<u>Cajophora lateritia</u> (Hook.) Kl.* - - - - -	6, 10
Malvaceae	
<u>Malva nicaeensis</u> All. (bull mallow) - - - - -	3
<u>M. parviflora</u> L. (cheeseweed)* - - - - -	3
<u>M. rotundifolia</u> L. (dwarf mallow)* - - - - -	3
Martyniaceae	
<u>Martynia</u> sp.- - - - -	6, 8
Moraceae	
<u>Humulus japonicus</u> Sieb. & Zucc.* - - - - -	6, 10
Nyctaginaceae	
<u>Abronia umbellata</u> Lam. var. <u>grandiflora</u> Hort.* - - - -	6, 10
Onagraceae	
<u>Clarkia elegans</u> Dougl. (clarkia)* - - - - -	6, 10, 21
<u>Epilobium californicum</u> Hausskn. (willow herb) - - - - -	3
<u>E. franciscanum</u> Barbcy. (willow herb)** - - - - -	4
<u>E. paniculatum</u> Nutt. (panicked willow herb) - - - - -	3
<u>Gaura lindheimeri</u> Engelm. & Gray (white gaura)* - - - -	21
<u>Godetia grandiflora</u> Lindl. (godetia)- - - - -	6, 20, 21
Oxalidaceae	
<u>Oxalis rubra</u> A. St. Hil.** - - - - -	3
Papaveraceae	
<u>Eschsholtzia californica</u> Cham. (California poppy) - - -	6, 8, 20, 21
<u>Papaver nudicaule</u> L. (Iceland poppy)* - - - - -	6, 10
Plantaginaceae	
<u>Plantago alpina</u> L.* - - - - -	6, 10

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Family and Species	Reference
Plantaginaceae (con.)	
<u>Plantago fuscescens</u> Jord.* - - - - -	6, 10
<u>P. lanceolata</u> L. (buckhorn plantain)** - - - - -	3
<u>P. major</u> L. (common plantain or ribgrass) - - - - -	3, 6, 8, 17
<u>P. psyllium</u> L.* - - - - -	6, 10
Plumbaginaceae	
<u>Armeria alpina</u> Willd.* - - - - -	6, 10
<u>Limonium sinuatum</u> (L.) Mill. (sea-lavender)* - - - - -	21
<u>L. suworowi</u> (Regel) Kuntze (Russian or rattail statice)* - - - - -	6, 10
Polemoniaceae	
<u>Gilia capitata</u> Dougl. var. <u>achilleaefolia</u> (Benth.) Mason (globe gila)*- - - - -	21
<u>G. densiflora</u> Benth.*- - - - -	6, 10
<u>G. tricolor</u> Benth. (birdseye)* - - - - -	6, 10
<u>Phlox drummondii</u> Hook. (annual summer phlox) - - - - -	6, 8, 18, 21
<u>P. paniculata</u> L. (summer perennial phlox) - - - - -	6, 8
<u>Polemonium caeruleum</u> L.* - - - - -	6, 10
Polygonaceae	
<u>Fagopyrum esculentum</u> Moench (buckwheat)* - - - - -	6
<u>Polygonum aviculare</u> L. (knotweed) - - - - -	3
<u>P. convulvulus</u> L. (black bindweed)* - - - - -	3
<u>P. persicaria</u> L. (ladysthumb)** *** - - - - -	3
<u>Rumex acetosella</u> L. (sheep sorrel) - - - - -	3
<u>R. crispus</u> L. (curly dock)** - - - - -	3
Portulacaceae	
<u>Calandrinia grandiflora</u> Lindl.* - - - - -	6, 8
<u>Portulaca oleracea</u> L.- - - - -	3
<u>P. sp.*</u> - - - - -	6, 8
Primulaceae	
<u>Anagallis arvensis</u> L. (red pimpernil) - - - - -	3
<u>A. linifolia</u> L.* - - - - -	6, 10
<u>Primula elatior</u> Hill (oxlip) - - - - -	6, 8
<u>P. polyantha</u> Mill. (polyanthus primrose)* - - - - -	21
Ranunculaceae	
<u>Adonis aestivalis</u> L. (summer adonis)* - - - - -	6, 10
<u>Anemone coronaria</u> L. (poppy-flowered anemone)* - - - - -	21
<u>Delphinium ajacis</u> L. (perennial delphinium or rocket larkspur) - - - - -	20, 21, 23

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Family and Species	Reference
Ranunculaceae (con.)	
<u>Delphinium cultorum</u> Voss. (perennial delphinium)* - - -	21
<u>Nigella damascena</u> L. (love-in-a-mist)* - - - - -	21
<u>Ranunculus asiaticus</u> L. (turban and Persian buttercups)* - - - - -	6, 21
<u>R. repens</u> L. (creeping buttercup)** - - - - -	3
Resedaceae	
<u>Reseda odorata</u> L. (mignonette)- - - - -	6, 8
Rosaceae	
<u>Fragaria californica</u> C. & S. - - - - -	3
<u>Geum chiloense</u> Balb. (geum)* - - - - -	21
<u>Potentilla monspeliensis</u> L. (rough cinquefoil)* - - -	3, 6, 10
Scrophulariaceae	
<u>Alonsoa warscewiczii</u> Regel* - - - - -	6, 10
<u>Antirrhinum majus</u> L. (snapdragon) - - - - -	2
<u>Calceolaria</u> sp. - - - - -	6, 8
<u>Collinsia bicolor</u> Benth.* - - - - -	6, 10
<u>Diplacus aurantiacus</u> (Curtis) Jepson - - - - -	3
<u>Ilysanthes dubia</u> (L.) Barnh.* - - - - -	3
<u>Linaria bipartita</u> Willd. (cloven-lip toadflax)* - - -	21
<u>L. canadensis</u> (L.) Dum. (toadflax)* - - - - -	3
<u>L. cymbalaria</u> (L.) Mill. (kenilworth ivy)* - - - - -	6, 10
<u>L. maroccana</u> Hook.* - - - - -	6, 10
<u>Maurandia lophospermum</u> Bailey* - - - - -	6, 10
<u>M. scandens</u> (Cav.) Pers.* - - - - -	6, 10
<u>Mimulus cardinalis</u> Dougl. (crimson monkeyflower)* - - -	21
<u>M. guttatus</u> DC. (common monkeyflower)* - - - - -	3, 4, 21
<u>M. luteus</u> L. (monkeyflower) - - - - -	6, 8
<u>Nemesia</u> sp. - - - - -	6, 8
<u>Scrophularia californica</u> Cham. - - - - -	3
<u>Verbascum hybridum</u> Hort.* - - - - -	6, 10
<u>Veronica americana</u> Schwein.* - - - - -	3
<u>V. anagallis-aquatica</u> L. (speedwell)* - - - - -	4
<u>V. buxbaumii</u> Tenore (byzantine speedwell) - - - - -	3
<u>V. peregrina</u> L.* - - - - -	6, 10
Solanaceae	
<u>Browallia demissa</u> L.* - - - - -	6, 10
<u>Capsicum frutescens</u> L. (pepper) - - - - -	2
<u>Datura stramonium</u> L. (jimsonweed)** *** - - - - -	3
<u>Hyoscyamus niger</u> L.* - - - - -	6, 10
<u>Nicotiana rustica</u> L. - - - - -	6, 10, 16

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Family and Species	Reference
Solanaceae (con.)	
<u>Petunia hybrida</u> Vilm. (petunia) - - - - -	2, 6, 10, 21
<u>Salpiglossis sinuata</u> Ruiz & Pav. (painted glory)* - -	21
<u>Schizanthus</u> sp. - - - - -	6, 8
<u>Solanum lycopersicum</u> L. (tomato) - - - - -	2, 6, 9, 10
<u>S. nigrum</u> L. (black nightshade) - - - - -	3
<u>S. tuberosum</u> L. (potato) - - - - -	2, 6, 16
Tropaeolaceae	
<u>Tropaeolum majus</u> L. (garden nasturtium)* - - - - -	21
Umbelliferae	
<u>Ammi majus</u> L. (bishopsweed)*** - - - - -	3, 6, 10
<u>Anethum graveolens</u> L. (dill)- - - - -	2, 6, 8
<u>Apium graveolens</u> L. (celery)- - - - -	2, 6, 19
<u>A. graveolens</u> var. <u>dulce</u> DC. (golden self-blanching celery)* - - - - -	19
<u>A. graveolens</u> var. <u>rapaceum</u> (Mill.) DC. (celeriac)* -	19
<u>Conium maculatum</u> L. (poison hemlock)** - - - - -	3
<u>Daucus carota</u> L. (carrot or wild carrot) - - - - -	2, 3, 6, 15, 19
<u>Didiscus caeruleus</u> DC. (blue laceflower) - - - - -	6, 8, 21
<u>D. pusillus</u> F. Muell.* - - - - -	6, 10
<u>Levisticum officinale</u> Koch* - - - - -	6, 10
<u>Oenanthe sarmentosa</u> Presl. (water parsley)** - - - -	4
<u>Pastinaca sativa</u> L. (hollow crown parsnip) - - - - -	2, 6, 10, 19
<u>Petroselinum crispum</u> (Mill.) Nym. (double curled parsley) - - - - -	19
<u>Petroselinum crispum</u> var. <u>tuberosum</u> Crovetto (Hamburg or turniprooted parsley)* - - - - -	6, 19
<u>Pimpinella anisum</u> L. (anise) - - - - -	6, 8
Urticaceae	
<u>Urtica californica</u> Greene (coast nettle) - - - - -	3
Valerianaceae	
<u>Centranthus calcitrapa</u> (L.) Dufr.* - - - - -	6, 10
Violaceae	
<u>Viola tricolor</u> L. (pansy) - - - - -	1

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Insect Vectors of Western Strain of Aster Yellows

Family and Species	Reference
<u>Acinopterus angulatus</u> Lawson - - - - -	7
<u>Chlorotettix similis</u> DeLong - - - - -	8, 11
<u>Colladonus commissus</u> (Van Duzee) - - - - -	9
<u>C. flavocapitatus</u> (Van Duzee)- - - - -	9, 11
<u>C. geminatus</u> (Van Duzee), geminate leafhopper (syn. <u>Thamnotettix geminatus</u>) - - - - -	2, 11
<u>C. intricatus</u> (Ball) - - - - -	9
<u>C. kirkaldyi</u> (Ball)- - - - -	9
<u>C. montanus</u> (Van Duzee), mountain leafhopper (syn. <u>Thamnotettix montanus</u>) - - - - -	2, 3, 11
<u>C. rupinatus</u> (Ball) (syn. <u>brunneus</u> DeLong and Severin) - -	9
<u>Euscelidius schenkii</u> (Kirschbaum) (syn. <u>Euscelis</u> <u>maculipennis</u> DeLong and Davidson) - - - - -	8, 11
<u>Fieberiella florii</u> (Stal) - - - - -	8, 11
<u>Gyponana hasta</u> DeLong - - - - -	6, 11
<u>Idiodonus heidemanni</u> (Ball) - - - - -	9
<u>Macrosteles fascifrons</u> (Stal) - - - - -	many
<u>Paraphlepius apertinus</u> (Osborn and Lathrop) - - - - -	4, 11
<u>Scaphytopius dubius</u> (Van Duzee) - - - - -	8
<u>S. irroratus</u> (Van Duzee) - - - - -	8
<u>Texananus incurvatus</u> (Osborn and Lathrop) - - - - -	10
<u>T. lathropi</u> (Baker) - - - - -	1, 5
<u>T. latipex</u> (DeLong) - - - - -	1
<u>T. oregonus</u> (Ball) - - - - -	1, 11
<u>T. pergradus</u> DeLong - - - - -	1
<u>T. spatulatus</u> (Van Duzee) - - - - -	5

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